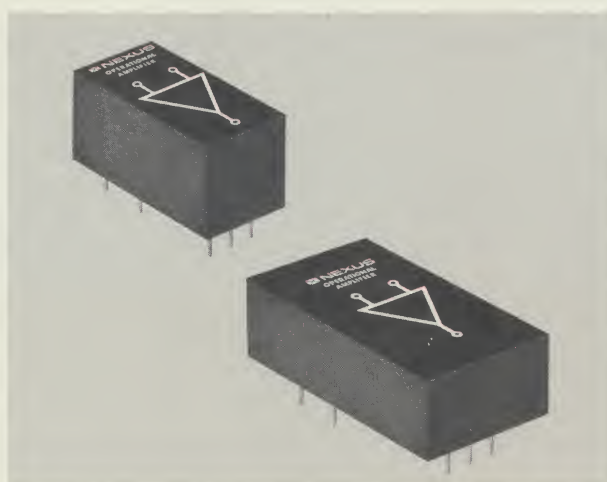




CASE SIZE — "D"
 TYPES: DA-1a
 CDA-3a
 CDA-12a

CASE SIZE — "L"
 TYPES: LA-1
 CLA-3
 CLA-12
 DL-1
 FSL-12

CASE DIM. "L" 2.02 LG. x 1.145 W. x 0.625 DP.
 CASE DIM. "D" 1.55 LG. x 0.75 W x 0.75 DP.
 CASE "L" — PINS: .040 DIA. x .25 LG. (NOM.) ON .100 GRID
 CASE "D" — PINS: .040 DIA. x .25 LG. (NOM.) ON .200 GRID

ABSOLUTE MAXIMUM RATINGS

Storage Temperature	—55°C to +125°C
Operating Temperature	—25°C to +85°C
Supply Voltage	±16 volts
Common Mode Input Voltage	±11 volts
Differential Input Voltage	±15 volts
Input Overdrive Current	±15 mA
Output Overload Current	±10 mA

ELECTRICAL CHARACTERISTICS

SYMBOL	CHARACTERISTICS (@ 25°C UNLESS NOTED)	DA-1a LA-1	CDA-3a CLA-3	CDA-12a CLA-12	DL-1	FSL-12		UNITS
V _{cc}	Supply Voltage (3-wire D. C.)	±15	±15	±15	±15	±15	Design Center	Volts D.C.
I _{cc}	Supply Current Quiescent Full Output	±6 ±9	±6 ±9	±6 ±9	±10 ±30	±10 ±30	Max.	mA D.C.
E _o	Output Voltage Range, Full Load	±10	±10	±10	±10	±10	Min.	Volts P-P
I _o	Output Current Range	±3	±3	±3	±20	±20	Min.	mA P-P
E _{cm}	Input Common Mode Voltage Range	±11	±11	±11	±11	±3	Max.	Volts P-P
E _{os}	Voltage Offset Stability @ Const. Temp. (Long Term)	±100	±100	±100	±100	±100	Typical	Microvolts
ΔE _{os} /ΔT	Offset Voltage Temperature Coeff. —25°C to +85°C	15 35	15 35	5 15	15 35	10 30	Typical Max.	μV/°C
ΔE _{os} /ΔV _{cc}	Offset Voltage/Supply Voltage Stability Coefficient	500	200	200	200	200	Typical	μV/V
I _{os}	Input Offset Current	±30 ±90	±1 ±2	±5 ±20	±30 ±90	±10 ±30	Typical Max.	Nanoamperes
ΔI _{os} /ΔT	Offset Current Temperature Coeff. 0 to +55°C	2.0 3.0	0.05 0.15	0.2 0.5	2.0 3.0	0.2 0.5	Typical Max.	nA/°C
ΔI _{os} /ΔT	Offset Current Temperature Coeff. —25° to +85°C	5.0	0.3	0.8	5.0	0.8	Max.	nA/°C
A _o	Open Loop Gain @ D. C. R _L = 10K	2x10 ⁴ 1x10 ⁴	6x10 ⁴ 2x10 ⁴	1.2x10 ⁵ 0.8x10 ⁵	0.5x10 ⁶ —	0.5x10 ⁶ —	Typical Min.	—
A _o	Open Loop Gain @ D. C. R _L = 500 ohms	—	—	—	3.0x10 ⁵ 0.5x10 ⁵	3.0x10 ⁵ 0.5x10 ⁵	Typical Min.	—
f _t	Unity Gain Crossover Frequency	1.5	0.5	1.5	1.0	100	Typical	mC
f _p	Frequency Limit For Full Output (Unity Gain Inverter)	10*	10	10	10	800	Typical	KC
Z _d	Differential Input Impedance @ D. C.	0.1	1.0	0.2	0.1	0.1	Typical	Meg-ohms
Z _{cm}	Common-Mode Input Impedance @ D. C.	10	100	20	10	—	Typical	Meg-ohms
R _{os}	External Offset Voltage Zero Trim Potentiometer (Not Supplied)	50K	1 Meg	100K	50K	100K	—	Ohms

*Full Output Extended to 50KC Available on Special Order

GENERAL DESCRIPTION

These premium grade analog modules are improved versions of the original NEXUS miniature encapsulated operational amplifiers, featuring a high degree of protection against input overdrive signals, as well as the high electrical stability, and low input offset current characteristics of these designs. Carefully selected silicon planar transistors are used throughout to insure long term stability. A high thermal conductivity encapsulant provides an isothermal internal environment as well as mechanical protection for components. Each amplifier is stabilized by prolonged baking at elevated temperature before encapsulating, and individually tested for electrical performance over the range —25°C to +85°C. Grid-spaced pin terminals permit socket mounting or direct mounting on printed circuit boards, etc.

APPLICATIONS

These operational amplifiers are designed primarily for closed-loop applications employing external inverse feedback. They are also usable open loop or with positive feedback as null or voltage-crossing detectors.

Types DA-1a and LA-1 are designed primarily for use in circuits with moderate closed-loop gains and where moderately high external resistances (10K to 50K) are encountered.

Types CDA-12a and CLA-12 feature lower current offset and tighter control of voltage offset stability, as well as higher gain. These characteristics are especially important at higher closed-loop gains and/or where higher external resistances (to 250K) are used.

Types CDA-3a and CLA-3 feature very low current offset and high gain, and are usable with megohms of external resistance and in low drift integrator applications.

Type DL-1 is similar to type LA-1 except that it has a current output range of ±20 milliamperes at ±10 volts and is capable of driving loads as low as 500 ohms, eliminating the need for an external booster amplifier in many applications.

Type FSL-12 is an extremely fast amplifier, specifically designed as a high speed inverter, adder, integrator or voltage crossing detector. It is approximately 100 times as fast as the DL-1 and has a full output capability in excess of 500 kilocycles. It is not, however, intended to replace type DL-1 in applications where both inputs must be active, i.e. (subtractions, followers, positive gain amplifiers, etc.)